

Push Switch 1.5mm-travel Vertical Type

SPPH1 Series



Vertical type available with two lever shapes.



Features

- 1.5mm-travel.

Applications

- For switches of in-vehicle units, hazard systems, and rear differential drives
- For various switching for LCD TVs, printers, and audio equipment

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products

Horizontal
Type

Vertical
Type

Typical Specifications

Items		Specifications	
Rating (max.)/(min.) (Resistive load)		0.1A 30V DC/50μA 3V DC	
Contact resistance (Initial performance/After lifetime)		20mΩ max./40mΩ max.	
Operating force		Refer to the products line	
Operating life	Without load	10,000 cycles	
	With load	10,000 cycles (0.1A 30V DC)	

Products Line

Changeover timing	Travel (mm)	Total travel (mm)	Rating	Mounting method	Poles	Operating force	Operating	Terminal style	Minimum packing unit(pcs.)	Products No.	Drawing No.	
Non shorting	1.5	2.5	—	PC board	2	2 ⁺¹ _{-0.7} N	Latching	Straight	100	SPPH110800	1	
							Momentary			SPPH110300		
							Latching			SPPH120400	2	
							Momentary			SPPH120100		
						3 ⁺¹ _{-0.7} N	Latching	Snap-in		SPPH130400	1	
							Momentary			SPPH130100		
							Latching			SPPH140300	2	
							Momentary			SPPH140100		
						Latching	Straight	Snap-in		SPPH110900	1	
							Snap-in			SPPH130500		
							SPPH140400			2		

Note

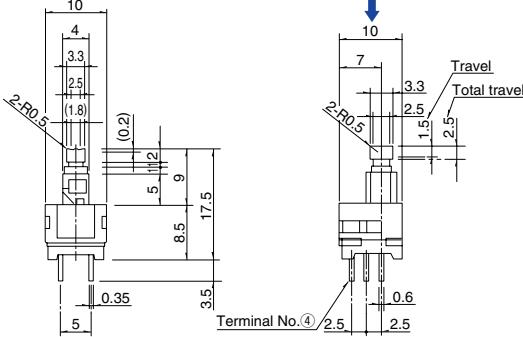
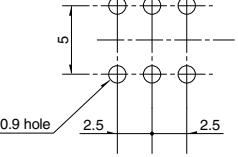
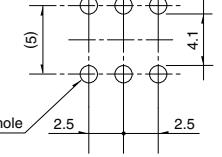
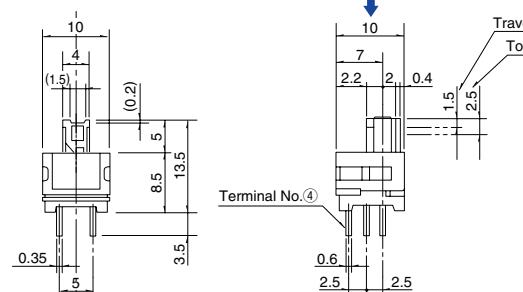
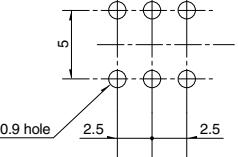
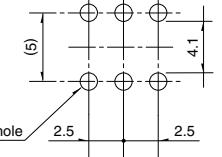
Additional switches not included in the above list are also available. Contact us for details.

For other specifications, see P.105

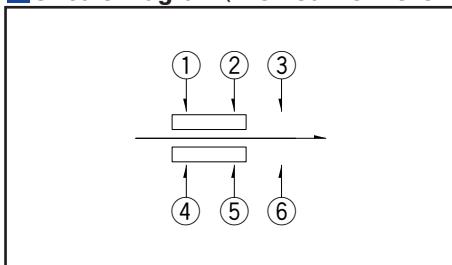
Dimensions

Unit:mm

Detector
Push
Slide
Rotary
Encoders
Power
Dual-in-line Package Type
Multi Control Devices
TACT Switch™
Custom- Products
Horizontal Type
Vertical Type

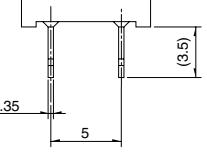
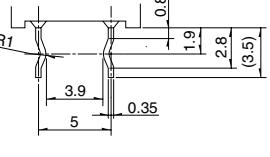
No.	Style	PC board mounting hole dimensions (Viewed from the direction A)	
1		Straight terminal 	Snap-in terminal  Thickness of PC board t=1.6mm
2		Straight terminal 	Snap-in terminal  Thickness of PC board t=1.6mm

Circuit Diagram (Viewed from the Direction A)



Terminal Style

Unit:mm

Straight terminal	Snap-in terminal
	

Products Specifications

Item	Series	SPEE	SPPJ6	SPPJ2	SPPJ3	SPUJ SPUP	SPUN	SPUN (medium current)	SPPH2	SPPH4	SPPH1	SPEA	SPEC	SPED2	SPED3	SPED4	SPED5													
Operating temperature range		-10°C to +60°C												-40°C to +85°C																
Rating (max.) (Resistive load)		5V 20mA	0.2A 12V DC	0.2A 30V DC	0.1A 30V DC	1A 25V DC	0.1A 12V DC	0.1A 30V DC				1A 14.5V DC																		
Electrical performance	Initial contact resistance	※	20mΩ max.				30mΩ max.	100mΩ max.	20mΩ max.	30mΩ max.	100mΩ max.																			
	Insulation resistance	10mΩ min. 100V DC	100MΩ min. 500V DC												3MΩ min. 500V DC															
	Voltage proof	100V AC for 1min	500V AC for 1 min.												100V AC for 1 min.															
Mechanical performance	Robustness of terminal	—	5N for 1 min.						3N for 1 min.			—																		
	Robustness of actuator	Operating direction	50N	30N	50N	30N	50N																							
		Pulling direction	—		50N	—	10N	—	50N	—																				
	Vibration		10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively																											
	Resistance to soldering heat	Manual soldering	—	350±10°C 3 ⁺ 1s	300±10°C 3 ⁺ 1s	350±10°C 3 ⁺ 1s	350°C max. 3s max.	350±10°C 3 ⁺ 1s			350±10°C 3±0.5s	—	—	350±10°C 3±0.5s	—	—														
		Dip soldering	—	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260±5°C 10±1s	260±5°C 5±1s	260°C max. 5s max.	260±5°C 10±1s	—	260±5°C 10±1s	—	—														
	Reflow		260°C max 10s max	—																										
Durability	Operating life without load	100,000 cycles	10,000 cycles 40mΩ max.			30,000 cycles 40mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	30,000 cycles 100Ω max.																		
	Operating life with load Load : As rating	100,000 cycles	10,000 cycles 40mΩ max.			5,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	10,000 cycles 50mΩ max.	30,000 cycles 100mΩ max.																			
Environmental performance	Cold	-40±2°C for 96h	-20±2°C for 96h										-40±2°C for 96h																	
	Dry heat	85±2°C for 96h																												
	Damp heat	40±2°C, 90 to 95%RH for 96h																												

Note

1V or less, at the present rating of 1mA, 5V DC for output voltage.

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